

Customer No.: 31561  
Application No.: 10065,566  
Docket No.: 9747-US-PA

### AMENDMENTS

#### In The Claims

**Claim 1. (original)** A driving circuit for a display device having a plurality of pixels, wherein the driving circuit is used for driving the light-emitting device in each pixel, the driving circuit comprising:

a light-emitting device driving unit coupled to the light-emitting device for providing a driving current to the light-emitting device selectively; and

a discharging unit coupled to the light-emitting device driving unit for discharging the light-emitting device according to the voltage level of a control signal as soon as the light-emitting device driving unit provides a driving current to the light-emitting device.

**Claim 2. (original)** The driving circuit of claim 1, wherein the driving circuit may further include a light-emitting device selection unit coupled to the light-emitting device driving unit for receiving a scan signal and a data signal, and when the scan signal and the data signal are at logic level '1', the light-emitting device selection unit enables the light-emitting device driving unit to provide a driving current to the light-emitting device.

**Claim 3. (original)** The driving circuit of claim 2, wherein the control signal uses the scan signal from the next pixel.

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**Claim 4. (original)** The driving circuit of claim 3, wherein the discharging unit discharges the light-emitting device when the scan signal on the next pixel is at a logic level '1' or a high voltage level.

**Claim 5. (original)** The driving circuit of claim 1, wherein the discharging unit is coupled to a ground potential so that electric charges are discharged from the light-emitting device to the ground.

**Claim 6. (original)** The driving circuit of claim 1, wherein the discharging unit is coupled to a negative voltage so that electric charges are discharged from the light-emitting device to the negative voltage terminal.

**Claim 7. (original)** The driving circuit of claim 1, wherein the discharging unit is a transistor and the transistor is switched on to discharge the light-emitting device according to the voltage level of the control signal.

**Claim 8. (original)** The driving circuit of claim 7, wherein the gate terminal of the transistor is connected to the control signal terminal and the drain terminal of the transistor is connected to a ground potential so that electric charges in the light-emitting device discharge to the ground when the transistor is turned on by the control signal.

**Claim 9. (original)** The driving circuit of claim 7, wherein the gate terminal of the transistor is connected to the control signal terminal and the drain terminal of the transistor is connected to a negative voltage terminal so that electric charges in the light-emitting device discharge to the negative voltage terminal when the transistor is turned on by the control signal.

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**Claim 10. (original)** The driving circuit of claim 1, wherein the light-emitting device includes an organic light emitting diode (OLED).

**Claim 11. (original)** The driving circuit of claim 1, wherein the light-emitting device includes a molecular light-emitting diode.

**Claim 12. (original)** A display device having a plurality of pixels, wherein each pixel has a driving circuit for driving the light-emitting device inside each pixel, the driving circuit comprising:

a light-emitting device driving unit coupled to the light-emitting device for providing a driving current to the light-emitting device selectively; and

a discharging unit coupled to the light-emitting device driving unit for discharging the light-emitting device according to the voltage level of a control signal as soon as the light-emitting device driving unit provides a driving current to the light-emitting device.

**Claim 13. (original)** The display device of claim 12, wherein the driving circuit may further include a light-emitting device selection unit coupled to the light-emitting device driving unit for receiving a scan signal and a data signal, and when the scan signal and the data signal are at logic level '1', the light-emitting device selection unit enables the light-emitting device driving unit to provide a driving current to the light-emitting device.

**Claim 14. (original)** The display device of claim 13, wherein the control signal uses the scan signal from the next pixel.

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**Claim 15. (original)** The display device of claim 14, wherein the discharging unit inside the driving circuit discharges the light-emitting device when the scan signal on the next pixel is at a logic level '1' or a high voltage level.

**Claim 16. (original)** The display device of claim 12, wherein the discharging unit inside the driving circuit is coupled to a ground potential so that electric charges are discharged from the light-emitting device to the ground.

**Claim 17. (original)** The display device of claim 12, wherein the discharging unit inside the driving circuit is coupled to a negative voltage so that electric charges are discharged from the light-emitting device to the negative voltage terminal.

**Claim 18. (original)** A method of driving a display device, wherein the display device has a plurality of pixels and the driving method is used for driving the light-emitting device inside each pixel, the driving method comprising the steps of:

providing a driving current to one of the light-emitting devices selectively; and

discharging the light-emitting device according to the voltage level of a control signal while the light-emitting device is driven by a driving current.

**Claim 19. (original)** The driving method of claim 18, wherein the step of providing a driving current to one of the light-emitting devices selectively includes providing a driving current to the light-emitting device when a scan signal and a data signal sent to the display device are at a logic level '1' or a high voltage level.

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**Claim 20. (original)** The driving method of claim 19, wherein the control signal is provided by the scan signal of the next pixel in the display device.

**Claim 21. (new)** The driving circuit of claim 1, wherein the discharging unit is coupled to a point for connecting the light-emitting device and the driving circuit.

**Claim 22. (new)** The driving circuit of claim 12, wherein the discharging unit is coupled to a point for connecting the light-emitting device and the driving circuit.

**Claim 23. (new)** The driving method of claim 18, wherein the discharging unit is coupled to a point for connecting the light-emitting device and the driving circuit.

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### In The Specification

[0015] ~~he~~ The driving circuit further includes a light-emitting device selection unit coupled to the light-emitting device driving unit for receiving a scan signal and a data signal. When the scan signal and the data signal are at logic level '1', the light-emitting device selection unit enables the light-emitting device driving unit so that the light-emitting device driving unit provides a driving current to the light-emitting device.

[0022] Fig. 2 is a timing diagram showing voltage/time relationship for the voltages  $V_{dd}$ ,  $V_{scan}$ , and  $V_{data}$  ~~and  $V_{gt}$~~  in the conventional driving circuit shown in Fig. 1; and

[0034] The aforementioned discharging unit ~~31~~ 315 discharges the light-emitting device 320 to the ground. In another embodiment, the discharging unit ~~31~~ 315 may connect to a negative voltage terminal to increase discharge efficiency. For example, the drain terminal of the third thin film transistor (TFT3) may be connected to a voltage source  $V_{drv}$  at a ground potential or a negative voltage. If the drain terminal is connected to a negative voltage, discharging rate from the light-emitting device will increase and working life of the display may increase.